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ABSTRACT

School climate is an elusive but powerful concept that has captured the attention of both researchers and practitioners, but choosing an instrument to assess climate can be very complicated. This monograph accordingly discusses four basic issues that should be considered prior to selecting an instrument to measure school climate: purpose, choice of variables, seeking opinions about climate, and data gathering and reporting. First, five reasons are presented for collecting data on school climate: to identify strengths and weaknesses, to evaluate school programs, to describe and compare schools, to open up communication, and to identify groups for special treatment. Second, climate variables must be determined. Based on Tagiuri's (1968) taxonomy, these include ecology, milieu, social system, and culture. Third, opinion data should be gathered from representatives of all school constituencies. Finally, considerations in gathering and reporting data include understandability of scores, appropriateness of summary statistics, ease of comparison across variables, use of a normed referent group in making comparisons across schools, costs, and availability of special services. References are included. (TE)

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MEASURING SCHOOL CLIMATE: QUESTIONS AND CONSIDERATIONS

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School climate is an elusive but powerful concept that has captured the attention of both researchers and practitioners as they struggle with the need to understand and make improvements in schools. The role of climate in understanding the operation of schools has been a fascination of researchers for some time, while practitioners' interest in climate is more recent. When one talks with school administrators, there is a knowing nod when the discussion turns to the effect of climate or the ethos (Rutter, Maughan, Mortimore, Ouston, & Smith, 1979) of the school on the productivity of both staff and students. This acknowledgement of the importance of school climate by practitioners has been fueled by research that suggests that climate does affect a variety of student outcomes (e.g., Anderson, 1982; McDill & Rigsby, 1973). Some researchers (e.g., Rutter, 1980; Wilson, 1980) say that one reason Coleman and his colleagues (1966) concluded that schools don't make a difference is that critical climate variables were not included in the study. Yet another stimulus for practitioners' interest in school climate has been the focus on alterable school conditions that has been encouraged by the recent reform movement (e.g., National Commission on Excellence in Education, 1983).

A wide range of instruments for measuring climate is available for use by school personnel. Starting with the Organizational Climate Description Questionnaire developed by Halpin and Croft (1963) for administration in elementary schools, and the High School Characteristics Index (Stern, 1963), numerous instruments have been either adapted from other fields or created specifically for school use. Most of these instruments have

followed the tradition outlined by Selvin and Hagstrom (1963) for developing climate measures.

Choosing an instrument to assess climate can be a very complicated undertaking, particularly for individuals who are reviewing climate instruments for the first time. At least four basic questions should be carefully thought through prior to instrument selection. If clear answers are provided to each of these questions, the potential will increase significantly for the climate data collected to be truly useful in meeting school needs. The questions are:

1. For what purpose are climate data being collected?
2. Which climate variables should be assessed?
3. Whose opinions about climate should be sought?
4. How should data be gathered and reported?

The remainder of this paper discusses considerations that should be kept in mind when answering each of the four questions. It is based on our experience in reviewing climate instruments for inclusion in Looking at Schools (McGrail, Wilson, Buttram, & Rossman, 1987), a directory that we recently prepared of instruments for use in school analysis and improvement.

Unfortunately, our discussion here raises more issues than it resolves. The reason is simple: there are no easy solutions to the problems involved in measuring school climate. However, pointing out the complexity of the undertaking should help practitioners, as well as researchers, avoid some of the more obvious pitfalls.

For What Purpose?

Very often, the purpose of measuring school climate is not clear, or the intended purpose is not the one expressed. It is important that school personnel specify from the outset why climate data are being gathered, since a decision about purpose will dictate, or at least contribute to, other decisions that need to be made prior to instrument selection.

There are at least five reasons for collecting data on school climate, other than to conduct research on basic questions about school environments. The reasons are:

1. To identify a school's strengths and weaknesses as a basis for planning improvements.
2. To evaluate school programs.
3. To describe and compare schools.
4. To open up communication.
5. To identify groups for special treatment.

If the reason for collecting climate data is to provide information for school improvement, then a primary consideration in some cases will be comprehensiveness. That is, an instrument will be selected that measures as many variables as possible so that opportunities for identifying areas in which improvement can occur or success maintained are maximized. In other cases, one may suspect that improvement is needed in particular areas. When this occurs, an instrument emphasizing those areas is an obvious choice. An additional concern when selecting an instrument for school improvement purposes is feasibility or ease of improvement. The variables in some instruments may be exceedingly difficult to change over the short term

or at all (e.g., commitment to career), whereas other variables may be more amenable to improvement (e.g., rule clarity).

If a climate instrument is being selected for the purpose of evaluating a particular program, then it is critical that the program under scrutiny be aimed at improving those variables measured by the instrument. This point seems obvious, but quite often an instrument is selected as a pre-post measure when the intervention being evaluated is not designed to change what occurs in the pre-post interval.

In selecting an instrument that will provide information to describe and compare schools, the instrument selector probably has more freedom than individuals selecting instruments for other purposes. An instrument can be chosen that includes variables that, for whatever reason, are viewed as important. Attention, however, should be paid to the way data are displayed. A table of mean scores of different schools is not nearly so useful as a display that offers some normed referent point for the comparison. The issue of display is elaborated on later in this paper.

If an instrument is to be used to open up communication, one concern should be whether or not the resultant data provide an appropriate basis for discussion by the targeted groups. Take the School Assessment Survey (SAS) (Wilson, Firestone, & Herriott, 1985) as an example. If one purpose of data collection is to open up communication between teachers and administrators or among teachers, then SAS is an appropriate instrument because the variables measured are ones that teachers, or teachers and administrators, would be interested in discussing. But, if the purpose of data collection is to open up communication between school staff and parents, SAS is not an acceptable instrument. Parents are generally not interested

in or able to discuss the variables that SAS measures (e.g., centralization of influence, horizontal communication).

When an instrument is being chosen for the purpose of identifying groups for special treatment, the selector should be clear on which groups he/she is trying to identify and on which variables they are likely to differ significantly from other groups. The Quality of School Life (QSL) (Epstein & McPartland, 1978) is an instrument that might be used to identify potential dropouts, since it measures variables like students' satisfaction with school. That information, coupled with other data like achievement and attendance, should be useful in calling attention to students who may be alienated enough to leave school.

Which Variables?

Before selecting an instrument to measure school climate, one also has to be clear about what is meant by the term "climate." An overall definition is not nearly so important as a decision about the particular variables of interest.

The variables measured by most climate instruments can be categorized according to Tagiuri's (1968) taxonomy of climate-related terms. This taxonomy includes four dimensions: (1) ecology (the physical and material aspects of climate that are external to individuals--e.g., age of school buildings, size); (2) the milieu (the characteristics of people and groups); (3) the social system (the patterned relationships of people and groups); and (4) the culture (the belief systems, values, cognitive structures, and meaning).

But, to encompass the classroom and school effectiveness variables included in some of the more recent climate instruments, an additional dimension appears to be needed. That dimension has to do with the interaction between individuals and the ecology, particularly the interaction between school staff or students and the curriculum. Take, for instance, the Santa Clara School Effectiveness Program Surveys (Pruyn & Weil, 1985) and the Connecticut School Effectiveness Interview and Questionnaire (Connecticut Department of Education, 1984). While each instrument includes variables like home-school relations and safe and orderly environment that could be included in one of Tagiuri's four dimensions, each also includes variables like monitoring of student progress and opportunity to learn/time on task that seem to fit only under what might be termed the learning and instruction dimension.

Regardless of how one classifies the various climate variables, what is important is the selection of an instrument that includes variables that assess what one wants to assess. The instrument name does not always tell the story. The Effective School Battery (ESB) (Gottfredson, 1984), for example, does not include the well known effective schools variables like high expectations and clear school mission. The Santa Clara School Effectiveness instruments include the effective schools variables, plus variables that are more typically associated with climate--variables like sense of community and collaborative organizational practices. Another caution--variables with similar labels may not measure exactly the same thing. Thus, it is important to review the particular questionnaire items that make up a variable before deciding whether that variable is really of interest. Attention should also be paid to the way in which groups of

items were selected for inclusion in a variable or index. There should be not only statistical evidence, but also a conception of schooling or results from previous research that provide a justification for combining particular items. Finally, the way in which items are worded should be considered. Important differences exist between assessing individual characteristics (e.g., "I generally treat students fairly") and assessing systemic characteristics (e.g., "Staff members treat students fairly at this school"). Care should be taken to ensure that items are indeed measuring the concepts of interest.

Whose Opinions?

As Sirotnik and Burstein (1985) point out, climate is not the property of the school itself, but rather exists because of the interactive chemistry of the humans who learn and work in that context. Consequently, one of the best ways to assess school climate is to ask those who help establish, maintain, or change it.

Climate instruments are available to collect data from students, teachers, administrators, and parents, as well as from school staff other than teachers and administrators, community representatives, and school board members. In some cases, an instrument will be selected exclusively on the considerations discussed earlier related to variables of interest and purpose of data collection, and data will be gathered from the group or groups specified by the instrument developer. In other cases, the groups to be surveyed will be a determinant of the instrument selected. The ESB, for example, does not include a parent survey, so it would be automatically eliminated from consideration if parent perception data were of interest.

The Santa Clara surveys or the School Self-Assessment Instruments (University of Washington, 1987) developed by the University of Washington and the Seattle Public Schools might be considered instead.

Once the groups to be surveyed have either been decided upon by school personnel or dictated by the instrument selected, a decision will have to be made regarding the number or subgroups of individuals within the specified groups that will be surveyed. Generally, it is recommended by instrument developers that data be gathered from all individuals within a particular group. But there are exceptions, such as the ESB developers, who point out that administering to a carefully drawn sample can produce dependable results. However, if only a sample is used, careful thought must be given to potential biases. For example, excluding vocational teachers from a survey on the mission of a comprehensive high school will clearly impact the results. In parent surveys, there is not only the sampling consideration, but also the need to take steps to ensure that the sampled individuals who respond to a climate instrument do not differ significantly from those who do not respond.

How to Gather and Report Data?

With respect to the selection of a method of collecting climate data, there is very little choice. Nearly all climate instruments are questionnaires. The exceptions include the Connecticut School Effectiveness Interview and the interviews and observations that make up the Middle Grades Assessment Program (Dorman, 1985).

In contrast, the reporting of climate data is a matter that requires considerable attention, if the results are to be maximally useful.

Climate data are of little utility if they are not presented in a format easily understood and used by the intended audience. Page after page of computer printouts documenting frequency distributions for 100 questionnaire items will be of little assistance to most school personnel, and of even less help to parents and community groups.

If a school or district is responsible for scoring and reporting, district personnel can specify the form in which data are reported. An important concern here is that clear and complete scoring directions be available from the instrument developer or publisher. If climate instruments are scored and data reported by a scoring service, instrument selectors should be clear in advance about the nature of the report they will receive. Whether reporting is done locally or by a service, several considerations should be kept in mind.

A first consideration has to do with the understandability of the scores. Often, the score for an individual item is clear. As an example, a score of 4.2 on a Likert item that ranges from strongly disagree (1) to strongly agree (5) is fairly straightforward. But, when multiple items are combined, the resultant score may be less clear. It is important that the audience for the data fully understand the meaning of, for instance, a 2.36 on a variable labeled staff collegiality.

Another consideration is the appropriateness of the summary statistic. In the vast majority of cases, a measure of central tendency (e.g., a mean) is employed, since it is the easiest to compute. However, depending on the variable, other measures may be more relevant. If agreement on an issue is the focus, then some measure of variability or skewness may be appropriate.

For example, SAS employs a concordance measure (a measure of variability) to assess agreement on goals.

A third consideration involves the ease with which comparisons across variables can be made. Generally, reviewers of the data will want to compare a score on one climate measure with a score on another. If the same metrics are used for all items and some correction is employed to account for variables with different numbers of items, then comparisons across variables are fairly simple. If, however, different metrics are employed, then the selector must be careful that some standardization procedure has been employed so that comparisons are possible. The School Assessment Survey, for instance, converts all index scores to a common metric, with a mean of 50 and a standard deviation of 10.

The final consideration involves comparisons across schools. If school comparisons are desired, there must be some normed referent group that acts as an anchor point. As an example, the ESB places school scores on a percentile continuum so that school staff can see how their school ranks relative to a normed sample of schools. The only caution here is that the selector be satisfied that the referent group to which his/her school will be compared is an appropriate one. The ESB was normed on samples of teachers and students in primarily urban districts with large minority populations. Comparing the scores of a rural school to those of the ESB sample would have to be done with caution.

Other Considerations

In addition to considerations related to the four questions above, there are some additional concerns that should be addressed by individuals

selecting a climate instrument. One of these concerns has to do with cost. For some climate instruments, like the Connecticut instruments, the cost of administration, scoring, and reporting is minimal. The Connecticut Department of Education will supply a school or district with reproducible copies of its Interview and Questionnaire. The instruments can then be duplicated at local expense, and administration, scoring, and reporting can be done by school personnel. In contrast, use of the Organizational Climate Survey (Bacharach, Bauer, & Shedd, 1986) involves substantial cost to a district, in part because a full-day feedback session is included in the instrument package.

The availability of special services from an instrument developer or publisher should also be taken into account. These services can range from the provision of data tapes that districts can use to perform their own analyses to the conduct of training programs to improve performance in areas identified as weak. If an instrument selector is interested in such services, determining their availability prior to instrument selection is advisable.

Conclusion

There is evidence from both the research and school communities that conditions of climate are associated with important outcomes of schooling. It is also acknowledged that many climate conditions are alterable. An important first step in improving climate is its systematic assessment. Reliable and valid climate instruments, some of which were referred to in this paper, are available for school improvement and other purposes. If these instruments are selected carefully, with the questions and

considerations we have mentioned in mind, there is much potential for measuring climate in a way that will guide its improvement.

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